### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization International Bureau



## 

(43) International Publication Date 4 November 2004 (04.11.2004)

**PCT** 

## (10) International Publication Number WO 2004/095199 A2

(51) International Patent Classification7:

G06F

(21) International Application Number:

PCT/US2004/012552

(22) International Filing Date: 20 April 2004 (20.04.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/464,409

21 April 2003 (21.04.2003) US

- (71) Applicant (for all designated States except US): VG GAMES LTD [GB/GB]; 92 Croxted Road, Dulwich, London SE2 18NP (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): MANBER, Jeffrey [US/US]; 519 North Alfred Street, Alexandria, VA 22314 (US).
- (74) Agent: ROSS, Otho, B.; Muserlian, Lucas & Mercanti, LLP, 475 Park Avenue South, New York, NY 10016 (US).

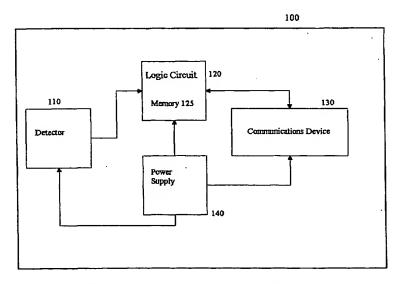
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEMS AND METHODS FOR GENERATING RANDOM NUMBERS FROM ASTONOMICAL EVENTS



(57) Abstract: The invention discloses systems and methods for generating pure random numbers from astronomical events, such as cosmic radiation or solar events. The invention includes a detector, a logic circuit, memory, power supply and a communication device. The detector may be, for example, a solar wind particle detector, an alpha ray detector, a gamma ray etector, or the like. The memory stores data from the detector. The communication device transmits the data. In addition, the logic circuit applies predetermined mathematical rules to the collected data to generate pure random numbers suitable for use in games of chance, horoscopes, astrology, sound or light displays, or other activities. In addition, the logic circuit may encrypt these random numbers before the numbers are transmitted to a receiving device.

